

# WHY IS THE STANDARDIZATION OF TELEHEALTH SERVICES IMPORTANT IN THE CONTEXT OF DIGITAL HEALTH STRATEGIES, ESPECIALLY DURING THE COVID-19 EPIDEMIC?

NEJA SAMAR BRENČIČ<sup>1</sup> & MALCOLM FISK<sup>2</sup>

<sup>1</sup>University of Maribor, Faculty for Organisational Sciences, Slovenia and IZRIIS  
Institute, e-mail: neja.samar-brencic@izriis.si

<sup>2</sup>De Montfort University, Faculty of Technology, School of Computer Science and  
Informatics, Leicester, UK, e-mail: malcolm.fisk@dmu.ac.uk

**Abstract** In order to ensure that the quality of telehealth services is adequate, the use of standards is indispensable. Telehealth offers remote monitoring and embraces those aspects of telemedicine where communication takes place directly with patients. Both come within the broader frame of reference that is offered by the term digital health. However, there are relatively few standards for services in the field of digital health. This means that standardization institutions and user associations should work together in the development of appropriate standards. Those standards that do exist are of variable quality and only sometimes utilized. However, in a context of rapid changes in technologies and service configurations, they will carry increasing importance within **health strategies and practice frameworks**; and will be in need of greater enforcement. In this paper, we will emphasise the importance of standards for remote health support and medical treatment. We will offer some examples of standards relating to digital health in European and internationally. We offer definitions for remote health service provision that relate, in particular, to the needs of older people; and set out some of the benefits of standardization of telehealth and telemedicine services within eHealth strategies.

**Keywords:**  
telehealth,  
standards of  
services,  
eHealth,  
telemedicine,  
digital  
health  
strategies.

## 1 Introduction

In light of the current COVID-19 pandemic, the need for remote medical treatment has become increasingly important for all people with or who have had the virus, including for those who have other chronic conditions. This need will remain after the end of the pandemic. Procedures and service protocols for such treatment will require standardization in order to ensure that the quality of services is maintained and that patients are afforded new choices in the way that they access or are provided with health and related support.

## 2 Digital health in praxis

Digital health, of which telehealth and telemedicine are a part, is a multidisciplinary field where various stakeholders and professionals must be a part of its processes, development and structure. Health professionals, researchers and scientists with a wide array of practical and professional knowledge in the fields of medicine, engineering, social science, public health, health economy and data management, all have a part to play in shaping digital health strategies if outcomes are to reflect what can be considered as good practice. This requires that patients or, rather, people are focal to service configurations.

At the global level for digital health, a three-stage transposition into practice is taking place in (1) the field of policy-making to support decision-makers at the local, regional and national levels - with the aim to ensure sustainability, safe and ethical use of technology; (2) the area of providers, in order to provide safeguards around the competence of service providers in their use of digital technologies; and (3) the area of the population - reflecting the broader aim of maintaining and/or improving people's health and well-being in a way that recognises, where appropriate, the importance of building people's health literacy and empowering them to self-manage.

The World Health Organization (WHO) has adopted the following broad description of digital health as 'the provision of health services where distance is a key factor by all health professionals who use information and communication technologies to share valid information for the diagnosis, treatment and prevention of disease and injury'. It is, therefore, concerned with remote (or at a

distance) service provision. In this context, research and evaluation and the continuous education of healthcare providers is key if there are to be wide-ranging and sustained improvements in the health and well-being of individuals and their communities.

### **3 What are the health needs of the older adults**

As we age, our health needs become more complex. There is the greater likelihood of chronic illness and a general trend of declining physical performance and mental acuity. Health services, however, do not adequately address the challenge of ageing well. Rather they are, for the most part, provided in a way that awaits the onset of acute conditions or symptoms. They often do this in a fragmented manner with coordination between care providers, may not be systematically coordinated and little, if any, attention may be given to the ways in which environmental and social factors can impact on our health as we age. In older adults, the increased needs and comorbidity, the problem of opacity and inconsistency in practice represents a particularly substantial challenge.

The digitalisation of healthcare and the development of remote health services to appropriate standards (including telehealth services) can help respond to this challenge subject to their affordability to and access by older people - before as well as after the impact of some of the corollaries and comorbidities of ageing is evident.

### **4 What does standardization bring to users of remote health services?**

Remote health services (including telehealth) as a means of accessing or providing services related to health and well-being must gain the trust of doctors, health and social care and support providers, as well as formal and informal carers. Only then can they be successful in the sense of being readily, and with confidence, widely (or even universally) used.

The standardization of the technological part of the solution offers, of course, a functional basis for remote services. But it is the nature and ethos of service provision that will ensure that their wider mission and purpose around people's health and well-being is achieved. Hence provision of or access to technologies alone cannot be the overall goal. These are simply part of the means to an end.

It follows that the knowledge, technological expertise and endeavour that goes into the development of technological solutions all lack meaning or relevance if there is little or no understanding of the needs, wishes and aspirations of patients (older people) carers and others. The technologies are, after all, not a 'one-off' consumer product. They underpin continuously operating services that provide support for circumstances that, whilst mostly supporting the maintenance or improvement of health and well-being, can sometimes relate to life-threatening events.

In this context, unbalanced and suboptimal solutions for standards can relate to their failure to adequately address issues around acceptability, staff (and user) training, and the availability (and, consequently, usability) of services rather than their technological components. Each step that underpins service provision and thus its integrity and reasonableness must, in turn, be defined by protocols that can be set within the frameworks offered by appropriate standards.

It follows that remote health solutions (including telehealth) will only be realized in the longer term when appropriate service standards are achieved. This requires the robust digital health strategies to be in place. Such strategies are under development in many European countries, including Slovenia; and are advanced or in place in Estonia, Denmark and Scotland. The WHO has, furthermore, released a draft 'Global Strategy on Digital Health 2020-2025'.

## **5 Examples of service standards in the EU**

Let us mention a few examples of relevant standards in the European context. Each link to distance health services and include components relating to services for older people. It should be noted that all the examples, as is the norm for standards, are 'voluntary' unless otherwise given a legal standing through appropriate legislation. Two of the examples have been developed under the auspices of CEN and ETSI - both European standardization organizations that are formally recognized by the European Union and the European Free Trade Association (EFTA). TC is Technical Committee; TR is Technical Report; and TS is Technical Standard.

*CEN standard on the 'Quality of Care for Older People'*: CEN / TC 449 has developed a standard for the care of the older people, regardless of where they live, according to the individual's needs and choices. It challenges 'top-down' approaches to both care and support services in older people's homes or institutional settings by considering how people access services or how they are provided rather than 'delivered' to users.

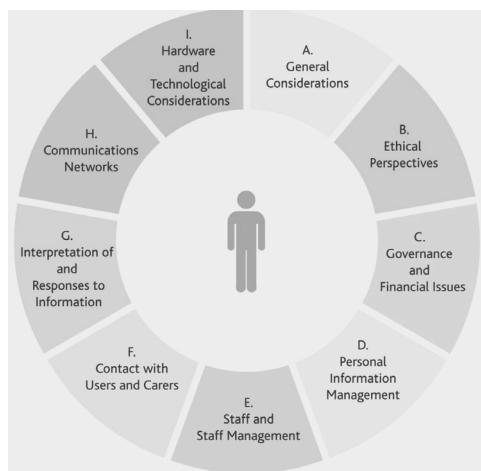
*ETSI standard for the 'Digital Citizen'*: ETSI has set out 'citizen and consumer requirements' in the context of smart cities and communities (published in 2020 as a TR 103 455). It is very much concerned with promoting participation and therefore points to the need for standards to promote the accessibility and usability of services to citizens including those who may be vulnerable or 'left out' as a consequence of provision being made digitally.

*ISO / TS 13131 Health informatics - Telehealth services - Quality planning guidelines; ISO / TS 13131: 2014*: This standard contains advice and recommendations on how to develop quality objectives and guidelines for remote health services that use information and communication technologies (ICT) to provide long-term and short-term healthcare. It covers various governance and procedural matters together with people-related processes (such as workforce planning, health care planning and accountability); infrastructure and information management requirements.

## **6 Example of good practice - International code of practice for telehealth services**

*The International Code of Practice for Telehealth Services (ICPTS)*: was developed by the Telehealth Quality Group (TQG), a European Economic Interest Grouping (EEIG) that was established on completion, in 2013, of the European Commission funded TeleSCOPE project (EAHC 2009 11 11). The TQG works in partnership with Global Community Resourcing (Australia) and since 2020 within ISfTeH, the International Society for Telemedicine and eHealth. The ICPTS provides quality criteria against which remote health services (telehealth) can be assessed and certified. Importantly, it addresses health both in its clinical and well-being senses. In being located in the preventive and public health space, it emphasizes the benefits for service users and the way in which services are provided. It includes the quality planning guidelines set out in ISO / TS 13131

(2014), this meaning that a service certified in accordance with the Code also meets the requirements of the technical specifications ISO / TS 13131.



**Figure 1: International Code of Practice for Telehealth Services: Framework and focus**

The Code contains nine areas, as shown in Figure 1. The central position of the person using the service symbolizes their importance and their freedom to decide on services and service options. A premium is placed in the Code, therefore, on services respecting (older) people's rights and dignity; and agreeing with users specifically on matters such as how their personal data, including health data, is collected, stored and used.

## 7 Digital health strategies and the benefits of standardization

The importance of strategic approaches to digital health cannot easily be over-emphasised - whether specifically or within the broader context of digital services. An international comparison of digital strategies, published by Bertelsmann Stiftung in 2018, has explored such strategies and set out considerations that need to be taken account of within them in respect of health-related services (Thiel et al, 2018). A comparison is made between different strategies and praxis in both European and OECD countries. After reading the individual reports, one can clearly understand its affirmation that 'the digital transformation of healthcare systems is hardly a straightforward process in any country, and it is not always a successful story'. It argues that generic digital and

specific digital health agendas need to go hand in hand with digital transformations needing good political leadership and coordination.

In the process outlined above, the standardization of services should be an underlying benchmark and a red-line that demonstrates the commitment to the quality of digital health services for their end-users. In the successful countries according to the Thiel et al (2018) studies, ‘the process of digitalization is health benefit-oriented and implemented in pragmatic steps. Politicians in these countries see the promotion of acceptance among patients, doctors and other health professionals as a central strategic task. Moreover: the end users of digital technologies, not (only) their professional representatives, are systematically involved in co-designing strategies and applications’.

We understand that the process of digitization of health, the framing of national strategies and the implementation of digital health services such as telehealth will not come to pass if the human factors and standardization of the processes and services are pushed aside.

Learning from these examples and providing research in line with the proposed indices, national bodies in charge of the health strategies would benefit greatly in setting out the factors that contribute to policies that successfully leverage digitization in order to optimize patient care, improve health literacy and foster self-management. The bodies could identify digital health indices that enable the evaluation of the state of digitalization achieved, its ‘reach’ to populations that may be underserved (including some older people) in their national context. The technical readiness, digital maturity and extent to which integrated (and interoperable) data exchange is actually taking place can also be identified - with all of these providing an indication of the barriers being overcome (or to be overcome) in advancing digital transformation of their healthcare system.\*

To further the digital health agenda and promote appropriate standardization, the Standards and Accreditation for Telehealth Services Working Group (SATS) was established in May 2020 within the International Society for Telemedicine and eHealth (ISfTeH). The founding members were dr. Malcolm Fisk, dr. Drago Rudel and Neja Samar Brenčič, M.Psych. The professional and organizational support of the Vice Executive Director of the ISfTeH, Frederic Lievens. The

establishment of the working group was encouraged by the work of the Telehealth Quality Group and researchers in the companies IZRIS Institute and MKS Elektronski sistemi d.o.o.; and benefits from the strong support of international experts in the digital health field.

The purpose of the working group, which operates at the international level, is to encourage the adoption and implementation of appropriate digital health standards within the European Community and internationally according to their needs and interests. Such adoption and implementation also requires that appropriate processes for accreditation and monitoring are put in place. All countries, of course, share agendas concerned for well-being and ageing populations, the need for which has been highlighted in the COVID-19 pandemic. The multi-faceted nature and the importance of the challenge demands, furthermore, collaboration between stakeholders. The working group provides a supportive environment for this and is already involved in various national and international activities to promote and support digital health strategy development within which the implementation of standardized service approaches will be possible - thereby ensuring the levels of quality that are necessary.

## **8 Conclusion**

We believe that it is necessary to establish and maintain at least basic quality standards for remote health services. This is especially the case in view of the conditions and needs that have become evident in the past year with the COVID-19 pandemic. In this context, remote monitoring and service access become both urgent and necessary in order to stop the spread of infections. However, the integration of such services into established modes of provision may not be easy. Hence the need for strategic and collaborative approaches that can be underpinned by appropriate standards.

It follows that this is part of a political, as well as health, agenda - with governing bodies needing to act decisively and with speed in order to expand the role and reach of digital health. Strategic approaches underpinned by standards can help deliver this - ultimately delivering better informed and healthier people and communities.



## References

- Bavec C., Kovačič A., Krisper M., Rajkovič V., Vintar M., Slovenija na poti digitalne preobrazbe. Založba UL FRI, Ljubljana, Ljubljana. ISBN 978-961-7059-01-4.
- Cramariuc O. , Mocanu I., Broczek K., Krivec D., Kolakowski J., Samar Brenčič N., Nagymáté Z., Nagy I., Consoli A., 2020, What can we learn from an ICT project dedicated to people living with dementia?, 2020. Conference Proceedings, 14th International Technology, Education and Development Conference Valencia, Spain. 2-4 March, 2020, ISBN: 978-84-09-17939-8 / ISSN: 2340-1079, doi: 10.21125/inted.2020
- Fisk M., Livingstone A., Pit S. W., 2020. Telehealth in the Context of COVID-19: Changing Perspectives in Australia, *Medical Internet Research*, 2020 (Jun 09); 22(6):e19264
- Fisk M., Livingstone A., Pit S. W., Telehealth in the Context of COVID-19: Changing Perspectives in Australia, the United Kingdom, and the United States, 2020, *Journal of Medical Research*, Published online 2020 Jun 9. doi: 10.2196/19264
- ISfTeH, Standards and accreditation for telehealth services working group, [https://www.isfteh.org/working\\_groups/category/standards\\_and\\_accreditation\\_for\\_telehealth\\_services](https://www.isfteh.org/working_groups/category/standards_and_accreditation_for_telehealth_services)
- Lohan E. S., Cramariuc O., Lukasz L., Samar Brenčič N., Cramariuc B., Analytic Hierarchy Process for assessing e-health technologies for elderly indoor mobility analysis. In: *EAI Endorsed Transactions on Smart Cities*. 2015 ; Vol. 16, No. 3.
- Rudel D., Fisk M., 2012. Telescope – telehealth services code of practice for Europe. *Informatica Medica Slovenica*; 17(1):38-44.
- Rudel D., Fisk M., 2011. Definitions of Terms in Telehealth, *Infor Med Slov*; 16(1): 28-46. <http://ims.mf.uni-lj.si/archive/16%281%29/21.pdf> (Accessible 2011-10-12).
- Samar-Brenčič N., Priložnosti v projektih Evropske unije za razvoj sodobnih storitev v zdravstveni negi, 2019, v *Digitalisation in Nursing: Report from the Meeting of the Nursing Informatics Section - SIZN 2019*, ed. Dornik, Ema. *Informatica Medica Slovenica*; Maribor Vol. 24, Iss. 1/2, (2019): 55-60.
- Samar Brenčič et al., Intuitive and intelligent solutions for elderly care, 2020. In *Advances in Predictive, Preventive and Personalised Medicine*, Proceedings of the 2nd International Conference on Digital Health technologies, Springer.
- Samar-Brenčič N., Podpora zdravja in oskrbe na domu na daljavo osebam z demenco in njihovim svojcem v perspetivi Evrope - Primeri dobrih praks programov, ki učinkovito vpeljujejo storitve s podporo lokalnih skupnosti v okviru evropskih programov, v *Zbornik Mednarodna konferenca o demenci, ASK 2018*, “Demenca - izziv naše družbe”, Medicinska fakulteta, Ljubljana.

- Thiel T., Deimel L., Schmidtman D., Piesche K., Hüsing T., Rennoch J., Stroetmann V. and Stroetmann K. (2018) 'SmartHealthSystems: International Comparison of Digital Strategies', Empirica, Bertlesmann Stiftung.
- Telehealth Quality Group EEIG, International Code of Practice for Telehealth Services, 2018.
- Woolham J., Steils N., Fisk M., Porteus J., Forsyth K., Outcomes for older telecare recipients: The importance of assessments, 2019, Journal of Social Work, <https://doi.org/10.1177/1468017319883499>